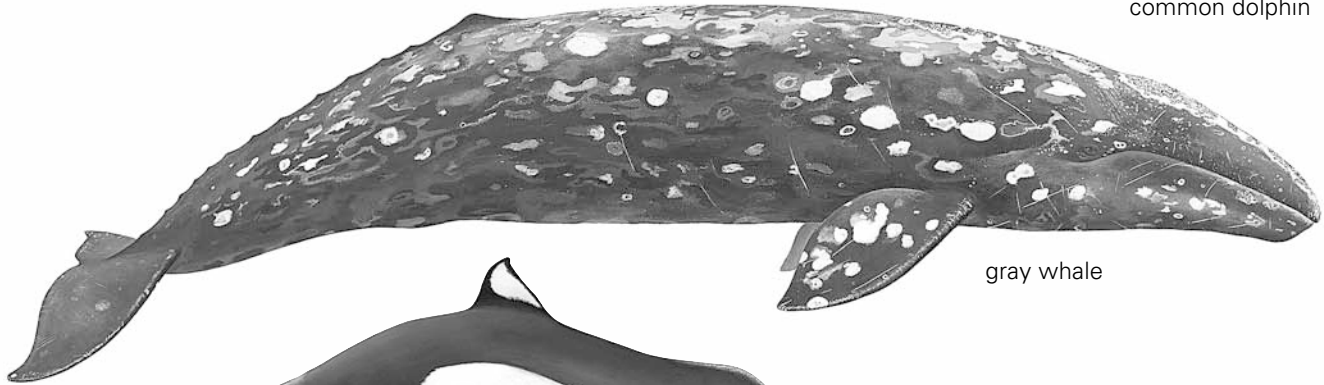


Cetaceans: Whales, Dolphins and Porpoises



common dolphin



gray whale



Dall's porpoise

Marine mammals in the cetacean family include whales, dolphins, and porpoises. Although whales spend all their time in the oceans, they are mammals just like us. This means that they are warm blooded, give live birth, nurse their young, have traces of hair or fur, and must come to the surface to breathe air through their lungs.

Millions of years ago, the ancestors of whales lived on land. Scientists believe these land ancestors looked like small dogs, were more closely related to hippos, and went into the ocean about 60 million years ago. Over time, these ancestors changed or adapted, to survive in their new ocean environment. Their front legs turned into paddle-shaped flippers, they lost their back legs, their tails grew larger and widened to form flukes, and they developed a thick layer of fat, called blubber, to keep warm in the ocean. Also, their skulls elongated and the nostrils shifted to the back of their heads to aid in breathing at the ocean's surface. They developed a series of adaptations related to diving, which include the ability to store more oxygen in their blood and muscles, and more blood volume relative to their body size than land mammals.

Cetaceans are separated into two groups: toothed and baleen whales. As their name suggests, toothed whales or odontocetes have teeth. They also have one opening at their blowhole. There are over 72 species of toothed whales, including sperm and beaked whales, belugas and nar whals, porpoises and dolphins, and even fresh water dolphins that live in rivers. They range in size from the 60-foot (21.1 m) sperm whale to the 5-foot (1.5 m) vaquita. Some toothed whales are quite unusual. For instance, the beaked whales spend most of their time in the deep water so they are rarely encountered, and new species are still being discovered! Some beaked whales are odd looking, and often only the males will have teeth (and only two at that). The straptoothed whales have only two teeth, which wrap around the top of their jaws so they cannot fully open their mouths! Toothed whales tend to be social and live in groups. Like bats, they use echolocation or sonar to detect objects in their environment. They produce sounds in the air passages in their heads, which are then projected out in front of them. The sounds bounce off solid objects and return to them (like an echo), so the animals are able to get a "picture" of what is around them. A lot of research is being done on whale

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sounds. Many species, such as the sperm whale, seem to have individually identifiable calls. Killer whales live in groups or pods and each pod has a dialect or accent, just like we have accents depending upon which part of the world we are from!

The baleen whales or mysticetes are the other group of cetaceans. Which includes 11 species ranging from the small minke whale at 30 feet (9.1 m) to the largest blue whale at 100 feet (30.5 m). These have two blowholes and instead of teeth in their mouths, mysticetes have hundreds of rows of baleen plates, which are made of keratin, a substance in our hair and fingernails. They act as filters for catching food. Most baleen whales feed by taking a large mouthful of food and water, and then they push the water out through their baleen plates with their tongues. The food gets trapped behind the baleen. Most baleen whales eat krill (shrimp-like animals) or small fish. Right and bowhead whales are baleen whales that feed in a slightly different way, which we call skimming. Water and food flows through a gap in the front of their baleen plates, the food gets trapped inside the baleen, and the water flows out through gaps on the sides of their mouths.

Even though baleen whales eat very small animals, which are low on the food chain, they are very large. For instance, the blue whale is the largest animal on earth, weighing 150 tons! Baby blue whales gain 10 pounds (4.5 kg) an hour.

Many whales are endangered, largely due to past hunting. Years ago, people used the oil from the blubber of whales for all sorts of items, including oil burned in lamps and ingredients for manufacturing lipstick. They also used whale meat to eat or make pet food, sinews for tennis racquet strings, and even used baleen as stays or supports in ladies underwear! A waxy substance called ambergris, which is from a sperm whale's digestive system, was used in making perfume. Ambergris was very valuable, and a large lump found by a beachgoer was worth a fortune.

Since 1986, there has been a temporary ban or moratorium on hunting the large whales for commercial uses. However, some countries still kill whales for "scientific" purposes and others have illegally resumed commercial whaling. This is controversial, because the products from these whales are still used commercially. Many scientists question whether the whales really need to be killed to learn the sorts of things being studied.

Many people are concerned about the fate of the small whales (the dolphins and porpoises). Thousands die every year from getting caught in fishing nets and plastic trash. Toxins and pollution in the ocean could be affecting the health of these animals and their ability to fight off diseases. Around the world, there has been an increase in reported strandings of marine mammals. Other species are suffering due to loss of their habitat. Sometimes, even whale watching can interfere with and harass whales, if the boats venture too close to the whales or separate mothers from calves. Small whales are sometimes captured for display in aquaria and even hotels, and many people question the quality of life and health for these animals. Still others are being hunted and eaten in some parts of the world.

In the recent past, popular movements helped to save the whales from hunting. Unfortunately, the whales are not completely safe. We need to understand and solve some of the problems currently threatening whales. Let others know about the issues and write to lawmakers. Also, if you ever have the chance, try to see live whales in their wild ocean homes. You will never forget it.

